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Reprint from SMITHSONIAN MISCELLANEOUS COLLECTIONS
(QUARTERLY ISSUE), Volume 45



City of Washington
Published by the Smithsonian Institution
December 9, 1903

5-37645

PRELIMINARY REPORT ON AN ARCHEOLOGICAL TRIP TO THE WEST INDIES

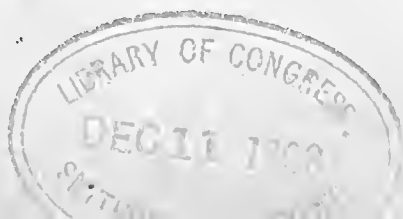
By J. WALTER FEWKES-

INTRODUCTION

The archeological results of a brief visit to Porto Rico in the spring of 1902 were so promising that the author was encouraged to renew his explorations in the following winter, when he could devote more time to his researches. Therefore in November he returned to the island where he continued until the close of May, 1903, with the exception of a month spent in Santo Domingo. The size of the collection of prehistoric objects made on this visit so far exceeded expectations that a mere preliminary report can call attention only to the more important results. These will be considered under two general heads—Excavations, and Description of Specimens. Excavations were confined to Porto Rico and were made in caves, village sites, and dance enclosures. The objects considered under "description of specimens" embrace those which were purchased and brought back to Washington, as well as others that could not be obtained.

EXCAVATIONS

The nearest approach to ruins of prehistoric Porto Rican structures, now surviving, are enclosures surrounded by aligned stones, set on edge, which occur in the less frequented parts of the island. These enclosures are square or rectangular and their floor level is slightly below the surrounding surface. The stones forming their boundary walls are roughly hewn and sometimes bear pictographs, in one or two cases the upper end being rudely fashioned to represent the head or body of an idol. These structures, which are undoubtedly prehistoric, are sometimes called *cercados de los Indios*, or "Indian enclosures." They are also locally known as *juegos de bola*, from the belief that they were used in a game of ball, called *batey*, of which the Indians were fond. Oviedo describes this ball game, saying that it was played in enclosures outside the pueblos, where there were seats for the cacique and the spectators. Following analogy, we may suppose that other gatherings took place in these enclosures, since they were situated near the villages.



We know, for instance, that the islanders had elaborate mortuary dances, called *areitos*, which occurred at the burial of a chief or cacique, and from knowledge of kindred people it is probable that these *areitos* were performed near the graves of the dead. Historians are silent regarding the position of the Antillean cemeteries or the situation of the plazas in which the *areitos* were performed, but a suspicion that the latter occurred in the *juegos de bola*, the only known prehistoric structures remaining in Porto Rico, suggested to the author that cemeteries should be sought in their vicinity. With this thought in mind he chose for investigation a *juego de bola* near Utuado, where there are many of these structures in a fairly good state of preservation.

The enclosure chosen for excavation lies about three miles from Utuado, on the left side of the road to Adjuntas. Several mounds are situated on the south side of this enclosure, one of which is partly cut through by the neighboring road. A few feet below the surface, in this exposure, the author found fragments of prehistoric pottery and a few human bones, a discovery which led him to dig a trench completely through the mound. In the course of this work, which occupied several workmen the greater part of a week, ten skeletons were exhumed within a limited area, and several skulls, two of which were comparatively well preserved, were found. While the majority of these human remains were so decayed that they crumbled before they could be taken from the moist soil, it was evident that they represented Indian interments. The skulls showed the artificial flattening characteristic of the Antilleans, and the position of the larger bones indicated that some of the bodies had been buried in a sitting posture. Prehistoric implements and a mortuary food bowl were found near one of the skeletons. These and other evidences led to the conviction that the mound excavated was an Indian cemetery, the first of its kind ever found in Porto Rico.

The position of this cemetery has an important bearing on the interpretation of the neighboring enclosure, for if the *areitos*, or mortuary dances, were held at the burial mounds, they must have taken place in the *juegos de bola* near the cemetery. Consequently these enclosures were not only places for the game of *batey*, as popular legends assert, but also for the performance of mortuary dances, during which songs were sung extolling the illustrious deeds of the dead in peace and war and their magic power in aid of the living.





CELTS WITH STONE HANDLES FROM SANTO DOMINGO.
1. Length, $9\frac{3}{4}$ inches. 2. Length, $7\frac{3}{4}$ inches. 3. Length, 9 inches.

CAVE EXPLORATION

Porto Rico has many noticeable caves, some of which were utilized by the aborigines of the island. While there is no good evidence that these caverns were dwellings of the Indians for any considerable time, there is abundant proof that they were resorted to in prehistoric times for several purposes. They undoubtedly served, especially after the advent of the Europeans, as places of refuge and perhaps for temporary shelter or for the performance of secret rites when the aboriginal cultus was prohibited in public. There are many evidences that the caves were used for burial, which implies that they were places of ceremony, especially as ancestor worship was the main element in the Antillean religion. The walls of many of these caverns bear religious symbols, and niches where idols of stone or wood once stood can still be seen. These caverns are reputed to have yielded many prehistoric objects, and it is probable that others could yet be found in their floors. The author was anxious to test this belief by systematic excavation, so after visiting many of the most notable caves he finally chose for extended study one, most conveniently situated for that purpose, on the coast, three miles north of Manati, called Cueva de las Golondrinas, "Cave of the Swallows."

Excavations in this cave showed that it was once frequented by the aborigines, while pictographs on the walls gave other evidence of their former presence. There were found among the débris, on the floor, many fragments of the pottery peculiar to the islanders, and other evidences of primitive life, among which were broken celts, bones of animals which had served for food, and also ashes and charcoal. All of the implements and utensils were of ancient manufacture and so numerous that many people must have frequented this coast region and used this cave as their camping place. A few broken human bones were also uncovered, but whether they indicated former anthropophagous feasts or hurried interments could not be determined. The trenches dug in the cave floor through ten feet of débris showed, at all levels, art objects similar to those occurring on the surface, indicating no change in culture. There was no evidence of any great modification between the life of the earlier and the later occupants, and no satisfactory proof that the occupancy of the cave was of very great antiquity.

DESCRIPTION OF SPECIMENS

In the following pages the author will comment in a general way on the unique as well as on some of the more striking and unusual

specimens which he saw or obtained on the trip. It will not be possible at this time to compare these with similar objects already known; a detailed description is reserved for a more extended report, when available documentary and historical references to the uses of many of the objects will be freely quoted. Only such specimens are here considered as will indicate the wealth of new material possible to obtain in this almost neglected field. The size and value of the collection acquired during a comparatively brief sojourn is the best possible evidence of the promise which the West Indian field affords to the archeologist.

The collection brought back to Washington, including the specimens obtained by excavation and by purchase, numbers over twelve hundred specimens. These objects vary in scientific value, for while many are duplicates of forms already known to students, others are entirely unique. The most important collection obtained by purchase was from the Right Reverend Fernandez Meriño, formerly President, now Archbishop of Santo Domingo. This famous collection, which was the best on the island, contains about one hundred and ten specimens, most of which are unique. Considering our lack of knowledge of the antiquities of Santo Domingo, and the scarcity of specimens from this island in the National Museum, the acquisition of this rare collection, gathered with care during many years by a learned man, is gratifying.

Collections were also purchased in Porto Rico. Among these may be mentioned that of Sr. Zeno Gandia, formerly owned by the Gabinete de Lectura, a scientific and literary society which formerly existed in Ponce. A small collection was also acquired from Señor Angelis of Catania, and another from Señor Fernandez of Loquillo, in the eastern end of the island.

But by far the largest number of specimens from Porto Rico was obtained, one or two at a time, from the natives, commonly called *Jibaros*. For this purpose the author went from house to house in the poorer sections of several towns, as Manati, Ciales, Toa Alta, Toa Baja, Vega Alta, and Dorado, soliciting these objects directly from the people. Almost every small cabin was found to possess one or more perfect celts, called *piedras de rayo*, or thunder-stones, concerning which the owners possessed considerable folklore.

But the material obtained by purchase forms only a part of that made use of by the author in his studies. He availed himself of the opportunities afforded by his trip to study local collections which could not be acquired. Among these may be mentioned a Dominican collection owned by Señor Imbert, of Puerto Plata, who, al-



STONE IMPLEMENTS FROM SANTO DOMINGO AND PORTO RICO.

1. Polishing Implement (length, $8\frac{1}{4}$ inches). 2. Polishing Implement (length, $4\frac{1}{2}$ inches). 3. Ceremonial Celt (length, $9\frac{1}{2}$ inches). 4. Ceremonial Baton (length, 14 inches).

though unwilling to sell, gave every facility for study, kindly allowing the author free use of his notes and catalogue, in which are recorded the localities from which the specimens were obtained. The Imbert collection contains several unique objects, among which are a wooden idol (the best yet discovered in the West Indies), five sticks once used to induce vomiting, several pieces of prehistoric pottery of unusual shape, and numerous stone implements and rare fetishes. Another Dominican collection, owned by Señor Desangles (a native painter whose picture of Conoabo attracted attention at the Pan American Exposition in Buffalo), contains, among other prehistoric objects, a human effigy made of burnt clay and probably unique. Sr. José Gabriel Garcia, an author and a member of the leading publishing firm in Santo Domingo city, has many Indian specimens. The late Dr. Alesandro Llenas, of Santiago de los Caballeros, owned a well-preserved aboriginal wooden stool and two prehistoric Antillean skulls; and a Mr. Hall, an American of Puerto Plata, has a collection of stone objects. Both of the latter collections were generously placed at the disposal of the writer for study.

There still remain in Porto Rico many scattered prehistoric objects and one or two collections, among which may be mentioned that of Padre Nazario of Guayanilla. The owner kindly allowed the author to inspect this important collection, which contains many rare and unique objects.

STONE IMPLEMENTS

Celts.—The so-called celts which, as a rule, are finely polished, pointed at one end, and sharpened at the other, are called by the country people, as above stated, *piedras de rayo*, or “thunder-stones,” since they are believed to have fallen from the sky. Almost every household has one or more of these stones, which are thought to afford protection from lightning, or to be efficacious in the treatment of certain bodily disorders. The method employed by the natives to determine whether a stone is a “thunder-stone” or not, is to tie a string about it and put it in the flame of a candle. If the string burns immediately, the stone is not regarded as a true thunder-stone. About five hundred celts tested in this way and regarded by their owners as veritable thunder-stones were purchased. These celts are of many forms, from simple polished stones to well-made hatchets. Only one specimen of all those obtained in Porto Rico was provided with a groove for the attachment of a handle; in this specimen the groove was roughly pecked and was not polished like the remaining surface.

One of the implements collected resembles a double-edged axe; it is oval in form when seen in profile, has a rough surface, and is without a notch or groove for hafting. Several specimens show marks of surface pecking, but not of chipping, their present finish evidently having been produced by rubbing or polishing.

There are several flat, rough, double-edged stone implements, each with a notch cut on the opposite sides, evidently for the secure attachment of a handle. This variety of celt is well represented in the collections from Santo Domingo, but it has not yet been found in Porto Rico. None of these is smoothly polished and not one is petaloid in form. Other celts have a rough surface, and are pointed at one end and broad at the other, with a ridge marking the place of hafting. This type, which occurs more abundantly in Santo Domingo than in Porto Rico, recalls Carib implements described as having been found in the Lesser Antilles.

Several implements of soft stone are pointed at one pole and flattened to a cutting edge at the other. They have plane faces and rounded edges, thus differing from the next group, in which the faces are convex. There are no grooves or ridges for hafting.

The majority of celts are called petaloid from the resemblance of their profile to the petal of a flower. They are of all sizes and in some instances are made of stone either rare or unknown to the islands. The surface of these implements is convex and finely polished, and their forms show variation in the length as compared with the breadth. The cutting edge may be straight, slightly curved, or at an angle to the axis. In a few instances the "pointed" end is blunt, but in no case is there a groove or notch for the attachment of a handle. There is little doubt, however, that the celts were once provided with wooden handles, the stone having been inserted in a cleft in the wood and lashed with fiber or held with gum.

In the Archbishop's collection there are three celts with the blade and handle made of solid stone (plate xxxix). One of these (figure 2) is rudely fashioned, but another (figure 1) in point of finish ranks with the finest known examples.

Several writers on the archeology of the West Indies record the existence of celts with heads or bodies cut in low relief on the sides. A beautiful example of this work in the Archbishop's collection has a human head and a part of the body and arms cut on one face, as shown in plate xl, 3. This fine implement is termed a ceremonial celt on the theory that it was used in Antillean rites. It probably was not provided with a handle, which would have concealed portions of the figure in relief.

Chisels and other Implements.—A number of stone chisels, used for incising the complicated designs on objects of wood or stone were obtained in Porto Rico. These are cylindrical, and are either flattened to a sharp edge or pointed at one or both extremities. Some of these chisels have a cutting edge on one end and a point at the other, while others are blunt at one end with a point or an edge at the other. One of the chisels is perforated at the end opposite the sharp edge.

Other Stone Objects.—A stone implement, not belonging to the petaloid type of celts nor to the chisels, is of ovoid form which continues at one pole into a slightly curved extension that fits the hand so well as to suggest its use as a mawl.

Another type of stone objects, possibly ceremonial, consists of a stone disk with a slender handle attached to the rim. The richly decorated specimen of this type in the Smithsonian collection (plate XL, 4) was obtained in Santo Domingo by Mr. Gabb.

Two other stones (plate XL, 1, 2), one hard and black, the other brown and of softer material, are flat at one end, with bifurcated tips to the handles. One may assume that these objects were used as rubbing or polishing implements. Handles with bifurcated tips occur also in stone implements from the Lesser Antilles.

One of the stones in the Archbishop's collection has a profile like that of a clam-shell, the valve area having rounded projections. There is also in this collection a stone of melon shape, with meridian surface grooves which remind one of the ambulacral plates of a sea-urchin. The irregularity of these grooves and the artificially pecked surface stamp this object as an implement rather than as a fossil, which it somewhat resembles.

Some of the many stone balls found in Porto Rico, especially in ball courts or in streams, are undoubtedly artificial; but others are natural, water-worn boulders. They vary in size from several feet in diameter to that of a marble. One of the smaller specimens, made of soft stone, has small pits at the opposite poles.

Among the problematical objects from Porto Rico are two white stones unlike any yet described. They are cylindrical, four and a half inches long by an inch in diameter, and perforated at each end in such manner as to suggest, at first glance, that they were strung together in necklaces. A similar stone object, somewhat better made and ornamented with a human hand carved in relief on the surface, was seen in the Nazario collection. The stone cylinders are symbolic, not decorative, objects, and were carried in the hand for some unknown purpose. In his excavations at Utuado the author found a similar object made of bone.

Stone beads, of which there are many in the Imbert collection, in addition to the perforation through the axis, often have a smaller hole near the end, at right angles to this perforation, possibly for the insertion of feathers.

One of many problematical specimens in the Archbishop's collection is a large, flat, circular stone with a perforated extension on the rim (plate xli, 1). The author has seen another specimen, rectangular in shape, with two extensions, one on each angle of the same side. The use of these stones is unknown. It has been suggested that they were used to aid parturition, but there is no evidence to support this theory. One surface of the circular stone is decorated with a shallow, meandering groove; the other is without ornamentation.

Señor Imbert's collection contains a stone slab, a foot square, which the owner regards as a gaming implement. On each face there are six small pits arranged in two rows, and Señor Imbert believes that a pebble or other small object was placed under one or another of these pits and covered by the stone. It is supposed that, in playing the game, the opponent guessed under which depression the pebble was concealed, possibly indicating his choice by pointing at the corresponding depression on the upper surface. The author, having no other interpretation of the use of this slab, which is undoubtedly artificially worked and prehistoric, mentions this explanation more as a plausible hypothesis than as an exact determination of its use.

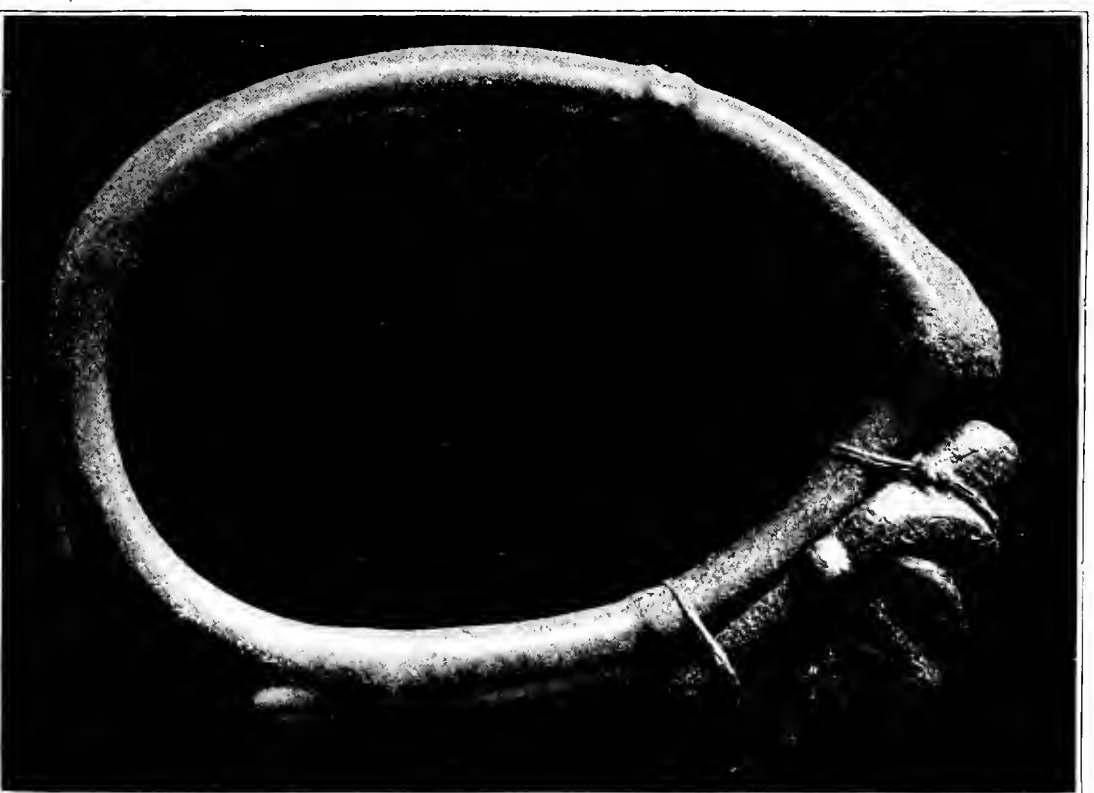
Stone Mortars.—Excavated stones, ranging widely in form and identified as mortars, were collected both in Santo Domingo and in Porto Rico. One of the best specimens, in the form of a shallow bowl, forms a part of the Archbishop's collection. Others are elongated or boat-shaped, and some have ornamented elevations on the rim.

In the Archbishop's collection, also, there is a flat stone slab with a shallow depression on one side as if designed to serve likewise as a mortar; but as the depression is perforated, it could not well have been used as such. It may have formed part of a primitive mill and have been used with an oval stone, flat on one side and convex on the other. The latter object, which has a pit in the middle and shallow grooves irregularly arranged in a radial direction on the convex side, may have served as a nether stone to the perforated slab.

Ornamented Stone Pestles.—The skill of the Antilleans in stone working is nowhere better shown than in the carvings on the handles of their pestles. These carvings are so well executed that the pestles



1. Flat circular stone. (Diameter, 17 inches.)



2. Stone ring with attached stone head. (Greatest diameter, 16 $\frac{3}{8}$ inches.)







ORNAMENTAL STONE PESTLES FROM SANTO DOMINGO.

1. Height, $5\frac{1}{2}$ inches. 2. Height, 9 inches. 3. Height, $4\frac{1}{4}$ inches. 4. Height, $4\frac{3}{4}$ inches. 5. Height, $5\frac{3}{4}$ inches. 6. Height, $7\frac{3}{8}$ inches. 7. Height, $7\frac{3}{8}$ inches.

are sometimes called idols, and it is indeed possible that some of them may have served as such. The majority, however, were household implements, and were designed purely for secular use, the figures cut on the handles being merely for decoration. So far as they have been studied, the carved pestles from Santo Domingo excel in finish those of the other West Indian islands, the Porto Rican examples being cruder and less carefully made. The Archbishop's collection contains several fine pestles with ornamented handles, many of which are adorned with human figures having heads, bodies, and limbs beautifully cut. One of the best of these figures (plate XLII, 1) represents a human being lying on its back, with legs drawn up and hands resting on the knees. In another fine specimen the handle terminates in a carved human figure with legs drawn to the body (plate XLII, 2). The opposite end of the handle of this specimen, where it joins the base, is surrounded by an incised broken line—an ornamental motive which constantly appears in Antillean pottery. The well-made pestle shown in plate XLII, 6, has the head and body well cut on the handle, the arms and legs appearing on the sides.

The base of these pestles is ordinarily lenticular, but in the example shown in plate XLII, 5, it is spherical; the whole handle is fashioned into a human figure, the head being well made, the legs sculptured in low relief but appressed to the body. There is a simple pestle in which the handle takes the form of a bird, the head and wings being well represented. Other collections from Santo Domingo contain pestles with bird-shaped handles, the ends of which are modified into rude heads.

IDOLS

In order to show the position of idolatry in the primitive worship of the West Indians, a few words on the general nature of Antillean religion may be opportune. According to early writers the inhabitants of Santo Domingo worshiped stone, wood, and clay idols, called *zemis*. It is learned from the writings of Padre Roman Pane, Peter Martyr, Benzoni, and others, that the sun, earth, and other nature powers were also called *zemis*; therefore it is evident that the term was applied not only to idols, but to the spirits which they represented; thus the sky-god was called a *zemi* and its wooden image bore the same name, in which case the term was made to designate both magic powers and their personations, a custom universally followed in American religions. The Antilleans, according to the above authorities, likewise called their ancients or ancestors *zemis*,

and sometimes gave the same name to their priests. Relics of the dead, as human skulls or other bones, images or idols, and other symbols or paintings of the same, were known as *zemis*. Each clan had, in the keeping of a chief, an idol or image of an ancestral *zemi*, the symbolism of which was characteristic of that clan. One Spanish writer declares that *zemis* are practically what Christians call angels—the immortal spirits of men. Here, also, the word refers to both the spirit and the personation—the magic power of the dead or an idol symbolizing or representing the same.

The worship of *zemis*, which practically included all supernaturals, gave rise to the use of a complicated system of objective symbols, idols, images, relics, and the like, each of which had a special and individual meaning. The idols were many and varied; they were made of wood, clay, or stone, and sometimes took the form of effigies of which the skulls or other bones of ancestors formed a part. There are representations of these various idols in several collections, but the present article will consider only those of stone, wood, and clay.

Stone Rings.—Among the problematic archeological objects from the West Indies none is more characteristic of Porto Rico than the so-called stone collars or rings. They are practically limited to Porto Rico and the immediately adjacent islands, and to the eastern end of Santo Domingo, for they have not been reported from Cuba, Jamaica, or the continent. There are approximately one hundred of these objects in the museums of Europe and the United States, and a few still remain in Porto Rico. To the Latimer collection, which in these objects is the richest in the world, the author has added eight specimens, some of which are unusually fine.

The use and meaning of the stone rings have given rise to much speculation, since historical records give no satisfactory clue to their function. These objects were apparently not mentioned by any chronicler contemporary with their use, and, indeed, they escaped notice until a little more than fifty years ago—three and a half centuries after the Indians had disappeared.

It has been conjectured that they were bandoliers worn by the caciques as insignia of rank, but some of them are too small for such purpose and others too heavy for a man to bear on his shoulders. The author believes that they were idols, and has therefore included them among the *zemis*. As an interpretation of what the objects represent, it is suggested that they are images of the coiled bodies of serpents or reptilian monsters which personated some great nature power, possibly a sky or wind god.

The heads of these idols, however, are not apparent, although no idol can be regarded as complete without the head. For this important part, which in all idols among primitive men is most carefully made, we look to another group of polished stone objects, also peculiar to the islands in which the stone rings are found, viz., the masks and heads, called mammiform images, which have been figured by several writers on West Indian antiquities. These masks are supposed to have formerly fitted certain roughened surfaces on the stone rings forming the coiled bodies of the serpent, in the manner indicated in plate XLI, 2. The arguments for and against this hypothesis, which was first suggested by Sr. J. J. Acosta in the notes to his edition of Inigo's *Historia de Puerto Rico*, cannot be given here, but will be considered more at length in other publications.

Idols with Conical Projections.—Among the stone objects in the Latimer collection, described by Prof. O. T. Mason,¹ occur certain tripointed specimens to which he gives the name "mammiform stones." These specimens, like the stone collars, have remained enigmatical up to the present time, but the true use of some of them, in the opinion of the writer, was, as above suggested, for attachment as heads to the coiled serpents or reptiles of which the stone rings represent the bodies.

Several of the tripointed stones bear representations of fore or hind legs (plate XLIII, 6) on a projection opposite that which contains the head. The fore-legs, when present, are cut on the sides of the conic elevation, while in the region of the shoulders are pits, which indeed are sometimes present even when there is no representation of limbs. In one or two instances there are two of these pits on each side. Some doubt arises whether these pits represent ears or shoulders, but their position on the legs corresponds with similar depressions sometimes found on the front legs of stools made in animal form. Possibly stone or shell ornaments were once inserted in these pits, in which case they doubtless represented ear pendants.

The fact that several of these tripointed stones have fore or hind legs cut upon them shows conclusively that in some instances they represent the complete bodies of idols, and were not fastened as heads to stone rings or other objects. An examination of the form of the head, and especially of the mouth, of these stones, reveals a similarity to corresponding parts of different animals, as fishes, lizards, and birds.

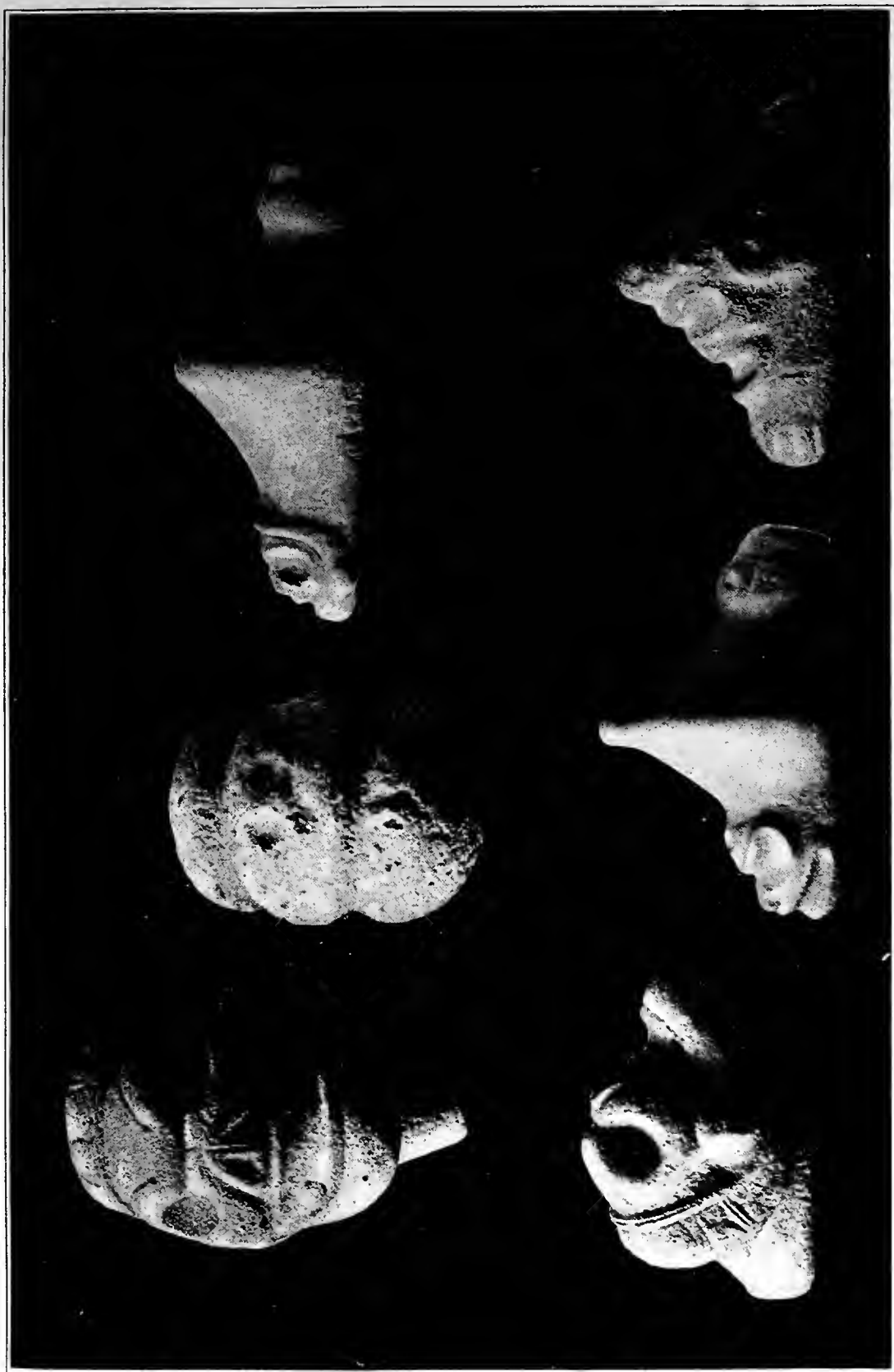
In considering the outlines of these tripointed stones it is found

¹ Latimer and Guesde Porto Rico Collections, *Smithsonian Reports*, 1876 and 1884, reprinted 1899.

that, while preserving much the same form, they fall into several types. In the first type (plates XLIII, 4, 5) one of the prominences is cut in the form of a head, while another represents the limbs or body, the conical prominence remaining unchanged. In another type (plate XLIII, 6) all three prominences are without carving, but a face is cut between two of their projections, the legs either appearing on the side of the stone or being wholly unrepresented. In still another type (plate XLIII, 1, 2) the conical prominence is modified into a mouth or nose, giving the stone, in some instances, the form of a mask.

The Archbishop's collection contains a good specimen (plate XLIII, 5) of the first type of these objects; there is a head on one projection, limbs on the other, and a conical protuberance between the two. Two specimens of this type from Porto Rico differ but little from those in the Latimer collection. One of the latter (plate XLIII, 4) is of fine brown stone, the other (plate XLIV, 2) of black basaltic rock. Both are smooth and well made, while the latter is one of the largest yet recorded. Another (plate XLIV, 1) of the same type, made of white marble with yellow patches, may be considered the finest specimen in the collection obtained by the writer. Its conical process, instead of being pointed, is hemispherical, and the surface is decorated with incised geometric figures, among which the circle and triangle predominate. A small mammiform idol, also of the second type, is made of black stone with surface decorated with incised circles and other geometrical figures. This object shows superficial remnants of a black resin or varnish which possibly originally covered the surface of all these idols. A pit on the back of the conoidal projection recalls a similar depression on the head of certain other specimens. Not all these stones of the second type have faces cut upon the conical protuberances; several were found which are perfectly smooth, although their forms are strictly the same as those on which eyes, nose, and mouth are indicated. One of these, which is very small and smoothly polished, is significant owing to the light which it sheds on the use of these stones. This I will shortly refer to.

The third type (plate XLIII, 1, 2) includes specimens in which the conical projection does not exist or in which its place is taken by the snout or mouth of an animal. The general form of this type is the same as that of the other mammiform images, having the slightly concave, rough under surface terminating in a prominence at each end, while the conical projection is replaced by a mouth or nose, recalling a form resembling a mask. In other words we have in



IDOLS WITH CONICAL PROJECTIONS FROM SANTO DOMINGO AND PORTO RICO.

1. Third type. 2. Third type (side view). 3. Trilobate stone (length, $5\frac{3}{8}$ inches). 4. First type (length, $9\frac{1}{2}$ inches). 5. First type (length, $8\frac{1}{2}$ inches). 6. Second type (length, $7\frac{3}{8}$ inches).

these objects an intermediate morphological link between mammiform stones and masks, although more closely allied to the former.

Two specimens of this hitherto unknown type of idols occur in the Archbishop's collection. The first (plate XLIV, 3), made of light brown stone, has a shallow eye, an elongated mouth, and fore-legs cut on the sides in low relief. The second example (plate XLIV, 4) is even more elaborately made, the details of the jaw being more completely worked out. In this specimen the fore-legs are not represented, but the raised forehead and throat ridges peculiar to other mammiform images are well shown. The eye sockets are deep, the nostrils appear in relief, and there are superficial markings suggesting teeth.

In studying the form and position of parts of this type it is evident that it is practically the same as that to which belong the preceding two with conical projections on top of the head, so that any valid objection to a theory of the use of the objects belonging to this type applies also to the others.

The specimen next to be considered (plate XLIII, 1, 2) also has the tripointed form of the mammiform zemi, but it lacks the conoidal elevation, and in that respect is more like a mask. It resembles the third type, or the two specimens last mentioned, except that the mouth, instead of replacing the conical elevation, is situated on one side, the nose being extraordinarily flattened. This specimen, like the last two, came from Santo Domingo; it was purchased from Sr. Zeno Gandia and formerly belonged to the Gabinete de Lectura at Ponce, Porto Rico.

The author also purchased in Porto Rico a rude stone head, resembling in certain respects the one last mentioned, but differing from it in having a projection at the top. A corresponding protuberance forms the neck, suggesting that the stone may have been lashed to some other object, such as a stone ring. A beautiful stone of the third type, in which the nose takes the place of the conoid projection, was purchased from Señor Gandia. Its lower, slightly concave surface has been fitted to one of the Porto Rican collars, as shown in plate XLI, 2.

In the absence of information regarding the use of these tripointed or mammiform stones here identified as idols, it has been suggested that they were merely highly ornamented mortars, the object when in use being reversed—the conoidal projection being inserted in the ground for stability, and the slightly concave surface thus brought uppermost. This theory is advocated by Im Thurn, a generally excellent authority on account of his intimate knowledge of related tribes.

But if this supposition be correct, why, it may be asked, has so much care been given to the ornamentation of the conoid prominences in the third type, which would be buried in the earth? It may also be pertinent to call attention to the tripointed stones with perfectly smooth surfaces, and particularly to one which is barely half an inch in length. Certainly these are not adapted in size for grinding implements, and their superficial polish would also seem to prohibit their use as such. It is evident that at least the small and smooth tripointed stones were not used as mortars, and as their form is practically the same as that of the larger ones, although the latter have a rough surface, it is doubtful if either type was used for grinding.

A direct statement by Ramon Pane regarding different forms of zemis should have great weight in determining the significance of these stones. He says that the Haytians had a form of zemi with "three points," evidently referring to some of the tripointed stones above mentioned. This writer also states that this form of tripointed objects was believed to make the *guica* grow.

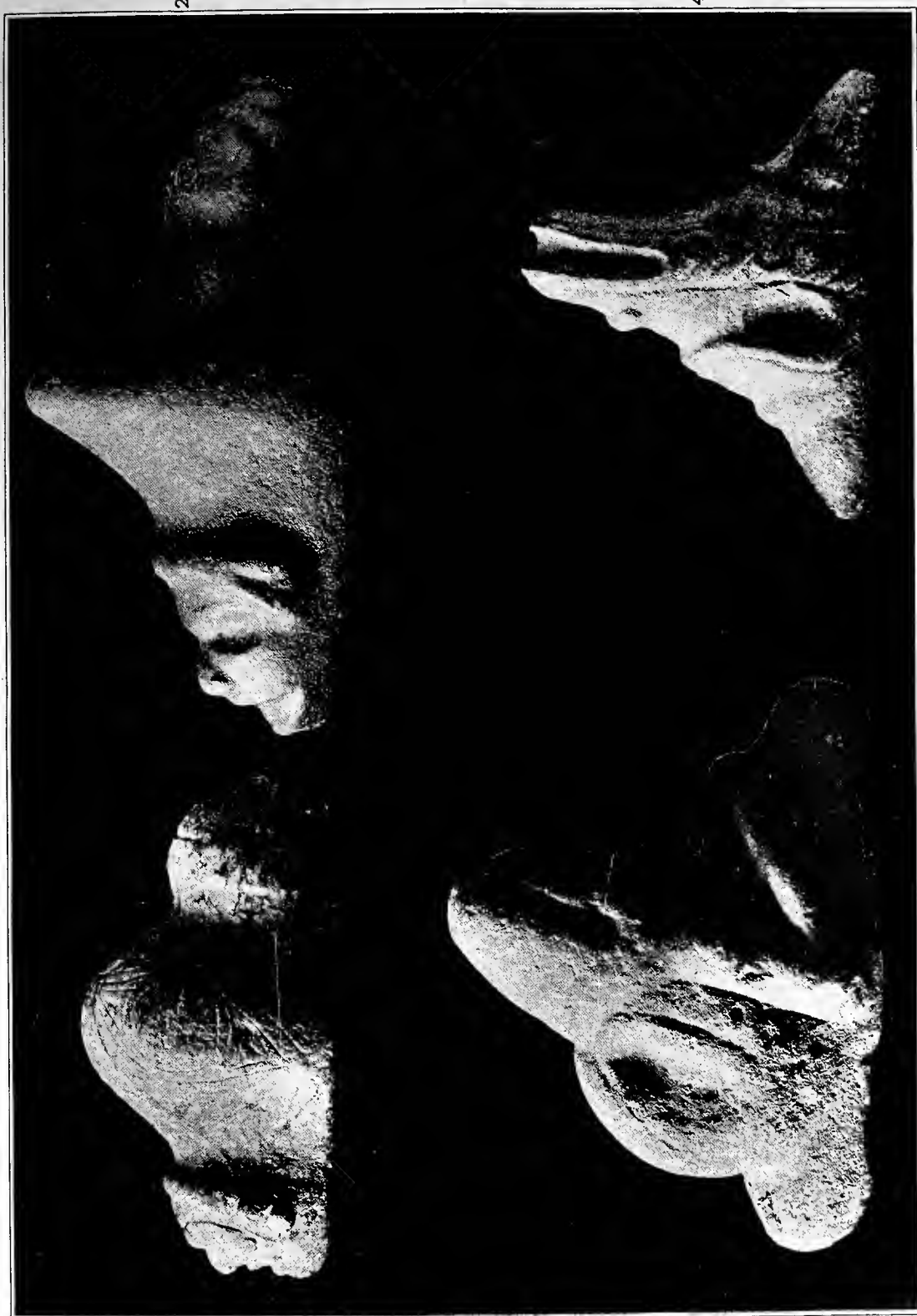
Stone Disks with Faces on one Side.—Two specimens of stone disks, bearing faces, are contained in the collection from Porto Rico. Although in their general outline they resemble the so-called masks of other authors, they differ from them in some particulars. It is possible to interpret them as symbolic masks, but while they could not have been worn over the face, they may have been attached to staves and set in mortuary mounds or carried in processions during the rites attending ancestor worship.

A rough stone, convex on one side and flat on the other, on which is a well-cut face, was purchased from Sr. Zeno Gandia, and a somewhat similar stone, a part of the edge of which is broken, was collected by the author in the mountains near Utuado, Porto Rico.

A small head with a part of the body occurs in the Imbert collection at Puerto Plata; it is of finely polished syenitic rock, and the eyes, nose, ears, mouth, and teeth are unusually well made. This object was evidently an idol.

The Archbishop's collection contains a stone (plate XLIII, 3) which, when viewed in profile, is seen to be trilobate, having a median projection flanked on each side by smaller ones. The middle projection has three depressions so arranged as to suggest eyes and mouth. This object is provisionally regarded as a crude idol of the mammiform variety, but it bears no resemblance to the tripointed forms.

Another stone head in the Imbert collection is spherical in form and has an extension at each pole in which there is a slight depression. The eyes, nose, and mouth are represented in relief; but the



STONE IDOLS FROM SANTO DOMINGO AND PORTO RICO.

1. First type (length, $8\frac{1}{4}$ inches). 2. First type (length, $10\frac{3}{4}$ inches). 3. Third type (length, $11\frac{1}{2}$ inches). 4. Third type (length, 9 inches).



1. Side view ; height, $10\frac{1}{4}$ inches.



2. Top view ; width $10\frac{1}{4}$ inches.

TRIPPOINTED VASE FROM SANTO DOMINGO.

remarkable feature of this specimen is three "wens" or knobs, one on the forehead and one on each temple. This head was found in the ruins of old Fort Santo Tomas, Santo Domingo, and was presented to Señor Imbert by José Roman Perez.

In a collection of prehistoric objects once the property of the late Dr. Llenas, of Santiago de los Caballeros, but now owned by his son, there is a similar specimen which should be mentioned in connection with the one last described. This is a stone ball like those so constantly found near the *juegos de bola* of Porto Rico, having the surface smooth with the exception of three knobs arranged in a triangle at one pole. Unlike the Imbert specimen, however, no face is carved upon it.

STONE AMULETS

A considerable number of small stone fetishes or amulets were seen in various localities of Santo Domingo and Porto Rico and a few were purchased by the author for the National Museum. Among the stone fetishes in Santo Domingo may be mentioned those in the collection of Señor Imbert of Puerto Plata, and those in the Nazario collection of Porto Rico. The specimens obtained convey a fair idea of the typical form of these objects.

The Antillean stone amulets are regarded as personal fetishes which were worn on the neck or breast. Early writers speak of the native custom of wearing small stone clan fetishes also on their foreheads when the warriors went into battle.

In the Archbishop's collection there is a twin amulet or fetish (plate XLVII, 4) representing two individuals united at their edges, the only specimen of its form known to the writer. One of the amulets of this general type, which is made of white stone, is perforated from one side to the other, but most of them have holes at the edges and not through the body.

The finest amulet obtained in Porto Rico is somewhat larger than those from Santo Domingo; it is made of marble, with the legs carved in relief and the virile organ conspicuous. The numerous forms of Santo Domingo stone amulets in the Imbert collection vary in size from an inch upward. There are others of shell which will be described later.¹

POTTERY

Although the prehistoric inhabitants of the West Indies were potters, none of their earthenware is of high order. They excelled

¹ For a fuller account of these amulets see *American Anthropologist* (N. S.), vol. 5, October-December, 1903.

in relief decoration, practised surface painting only to a limited extent, and were apparently ignorant of glazing. The clay used in their earthenware was coarse, but in some instances the finished product was polished.

The pottery objects vary in form from the shallow platter to the graceful vase, and include bottle-shaped jars and simple double-handled cooking pots. To one of the latter the soot still adhered when found. The most elaborate of all these vessels are the effigy forms, on which the head and other parts of the body are represented in relief. Marks of the coils of clay by which the vessels were built up may still be seen in several bowls. The surfaces were polished with smoothing stones evidently in much the same manner as among the Pueblo tribes of our Southwest.

One of the exceptional forms of Antillean pottery in the Archbishop's collection from Santo Domingo is a vase (plate XLV) with a central prolongation for a neck and two lateral extensions, resembling mammæ, on which decorated nipples appear. The central prolongation appears to have been made separately from the body, and to have been later attached with resin or gum. It is ornamented with eyes, mouth, and other organs in relief. In addition to its rarity in form, this jar is a striking specimen symbolically, the genitals of both sexes being represented in its decoration.

A small flat dish is decorated with a sinuous elevation extending about it, recalling the ornamentation of a fragment of pottery described by Mason. The two bottle-shaped vessels, with their necks ornamented in relief and the surfaces decorated with incised figures, are not duplicated in collections of West Indian pottery. These were obtained from the Archbishop of Santo Domingo.

Among the common objects found in the excavation of caves, village sites, and burial mounds, are many small, burnt-clay heads, often grotesquely human in shape, with protuberant mouths and eyes, suggesting the heads of monkeys, birds, lizards, and other animals. By some writers and many collectors these heads are supposed to be idols and are called *zemis*, but there is good evidence that they are simply relief ornaments from the sides or rims of clay vessels, a perfect one of which, in the form of a shallow bowl, occurs in the Archbishop's collection.

The boat-shaped effigy vase shown in plate XLVI has a projection on one end bearing a face, and ridges or elevations on the sides representing limbs, while the upper surface is ornamented with incised lines forming complex figures. This vase is said to have been found in a cave at Aguas Buenas, in the interior of Porto Rico, but unfortunately the author could not purchase it.

In the collection owned by Señor Neuman, of Ponce, there is a globular effigy vase representing a bird, the wings, head, and broken tail of which are somewhat conventionalized.

A perforated cylindrical roller of terra-cotta, from the Archbishop's collection, has its surface cut with an elaborate design. It is supposed to be a potter's tool and to have been used in transferring patterns to the surfaces of earthenware before firing. A circular clay disk, upon which is graven a simple design, may have been used for a similar purpose.

WOOD CARVINGS

The pre-Columbian West Indians were adept in carving, and fashioned many implements, idols, and other objects from the hardest varieties of wood. Their large canoes were manufactured from the trunks of trees, and the highly ornamented paddles by which they were propelled are mentioned by several of the early writers. Cassava-graters, clubs, stools, serpents, idols, and sticks used to induce vomiting are among the specimens of carved wood worthy of description.

Cassava-graters.—Flat or curved wooden boards with sharp stones so attached as to make a rough surface on which to grind the root of the manihot are represented in Santo Domingo collections. One of the best of these is owned by Señor Desangles of Santo Domingo city; another, in the collection of Señor Cambiaso, also of Santo Domingo, has the sharp stones fastened to the surface of the curved wooden board in geometric designs similar to those on Carib objects.

Clubs.—There are several so-called macanas or aboriginal Antillean clubs in Señor Cambiaso's collection. Although similar implements were undoubtedly used by the Porto Ricans, no specimen has yet been found on that island.

The Smithsonian collection contains a broken ceremonial baton from Santo Domingo, which may be considered under this head. It consists of a shaft of wood, at one end of which is cut an animal figure with a cap shaped like a bird. In general form this cap resembles the stone birds sometimes found in Porto Rico, one of which is owned by Mr. Yunghannis of Bayamon. There is every probability that this baton was used in a way somewhat similar to the staves bearing animal images which were erected by the Indians of Guiana on their burial mounds. A similar custom is described by Gumilla, who mentions the use of like objects in the mortuary ceremonies of the Salivas and other Orinoco tribes.

Stools.—The natives of the West Indies made stools or reclining chairs of wood or stone, to which they gave the names *turey* and

duho. These objects were fashioned with great care, sometimes in the form of animals, and often were decorated with much skill. Ten specimens of *duhos*¹ were seen by the author during his visit, five of which were made of wood and five of stone. Eight of the specimens seen were from Porto Rico. One of the two wooden stools especially worthy of mention is in the Imbert collection; the other, which is the best specimen known, belonged to the late Dr. Llenas.

Idol.—Señor Imbert possesses a well preserved idol of human form (plate XLVII), different from any yet described. It is made from a log of hardwood, and was once apparently covered with a black pitch, patches of which still adhere to the surface. The idol assumes a sitting posture, with hands on the knees, below which are enlargements representing the bands with which the Caribs bound their limbs to increase their size. The head is provided with a canopy, as in similar wooden figures. Evidently the eyes were of shell or gold, remnants of an adhesive pitch with which they were fastened in place being still visible in the sockets. The head is hollow, or has a cavity which communicates exteriorly by a hole in the back. Possibly a tube formerly connected this orifice with a hidden man who uttered responses to the questions of the priest through the medium of the idol; in other words, we may suppose that the image was sometimes used for oracular purposes, as described by Oviedo and Gomara.

Serpent.—One of the most remarkable specimens of West Indian carving is an image of a serpent owned by Señor Eugenio Velasquez of Puerto Plata. It is made of very hard black wood, the smoothly polished surface being decorated with incised geometrical figures. It represents a serpent in a single coil, with head slightly enlarged and tail flattened. The head is well carved and is provided with shallow eye-pits in which stones, shells, or gold nuggets were formerly inserted. The snake-like character of the mouth and nostrils is well represented, but the teeth are indicated only by scratches. On the top of the head is an incised circle and other geometrical figures, and the neck has a collar of incised lines, broken at one point, as is common in Antillean circular figures. Along the back of the body there is a row of four circles alternating with tri-

¹The Jibaros of Porto Rico, especially those in the mountains, still use a wooden stool with goat-skin seat to which they give the name *turey*. Probably the best locality in which to procure these modern stools is near Adjuntas, where lives an old man who is very clever in their manufacture. The ornamentation of the modern *tureys* is limited to inlaid work on the back.



EFFIGY VASE FROM PORTO RICO. (Two-thirds natural size.)



WOODEN IDOL FROM SANTO DOMINGO.
(Imbert Collection; about one-fourth natural size.)

angles and parallel lines, their size diminishing and the ornamentation ending a short distance from the tail, which is flattened and not decorated. On the belly there are well carved, smoothly polished scales. This wooden serpent is probably one of those to which early writers refer, and was no doubt highly venerated by its former owners. The object might also possibly have been used in more modern voodoo rites and ceremonies, but as designs upon it are characteristic of those occurring on prehistoric artifacts from the island, there is every likelihood of its ancient character.

Regurgitating Sticks.—In describing Antillean ceremonies, early Spanish writers casually state that, in approaching the idols the priests were accustomed to thrust sticks down their throats to induce vomiting, in order that their bodies might be purified before certain rites were performed. This custom, which occurs also in other primitive religions, is mentioned by Gomara, Benzoni, and others, and is illustrated in several early works; the known descriptions and figures of these regurgitating sticks, however, are not detailed enough to convey an idea of their form. In Señor Imbert's collection there are five wooden sticks, consisting of decorated shafts with handles, which were found with the wooden idol already mentioned, hence are believed to have been used in the regurgitation rite. Their shafts are slightly curved, and are flattened and smoothly rounded at their edges, so that they bear a general resemblance to curved paper-knives.

One of the sticks has the handle carved in the form of a kneeling figure, with globular head and with eyes represented by sunken pits in which, the finder claimed, there were nuggets of gold when he obtained the specimen. The fore-legs of the figure, as is customary in such carvings, are placed close to the side of the head. The part of the shaft just below the handle is decorated with incised grooves, ferrules, and other designs.

Another specimen, more elaborate than the first, has a handle carved into an image, the ribs and backbone of which are well indicated. The arms are represented in front of the body, and each hand carries an object different from the other. The feet are more like bird-claws, but the legs have incised lines representing the bands or garters with which the Caribs are said to have girt their limbs to increase the size of their calves. The shaft just below the handle is ferruled, and the incised lines at this point show a break, called the "life line," such as occurs in pottery decorations, idols, and stone pestles. Another of these sticks has a terminal figure with a perforated elevation at the back of the head. Legs are absent, but

the arms are well made and are flexed at the elbows, bringing the hands to the chest while the fingers are turned to the palms. This specimen also has the broken incised lines on the shaft.

In the other two specimens of these regurgitating sticks there are slight variations in the arrangement of the limbs of the figure forming the handles, otherwise they are generally similar to those described.

SHELL AND BONE CARVINGS

Antillean shell and bone carvings are practically unrepresented in the museums of the United States, and little is known of the skill of the aborigines of the West Indies in work of this kind. It is therefore with gratification that the author is enabled to mention a few specimens of shell and bone carving which he was fortunate enough to obtain. The best specimens of this sort that were seen are in the Archbishop's collection from Santo Domingo.

One of the finest examples of shell carving (plate XLVIII, 4) is made of the lip of a conch and was apparently used as an amulet. It consists of a head mounted on a base which is perforated for suspension from the neck or forehead. Great care was given to the carving of both the head and the base, the decoration consisting of cross-hatching and circles. The head is generally globular in form; the eye-sockets are depressions or pits in which gold balls were formerly inserted; while the ears, which are cut in relief, also have pits on the side as if to contain similar ornaments. The technique of the mouth and the teeth is good. The end of the nose is slightly upturned; the back of the head bears incised lines arranged in geometric patterns, following the Caribbean style of decoration.

Another carved amulet, of bone, (plate XLVIII, 5) represents a seated figure with arms akimbo, the hands resting on the knees. Eyes, ears, and appendages to the top of the head are well cut, but the nose is lacking. That part of the figurine which from the front appears to be the neck, is in reality a mouth having rows of teeth, just back of which the object is perforated as if for the passage of a cord by which it was suspended. The details of body and limbs are well worked out, even the umbilicus and leg bands being represented. The general form of this image suggests an amulet for suspension from the body, or perhaps tied to the forehead, a custom which the Caribs are reputed to have observed when they went into battle.

In the Imbert collection there is a flat, rectangular shell plate, about twice as long as broad, perforated at each end. One face of the disk is smooth, but the opposite is decorated with incised circles, dots, triangles, and other figures.



CARVED SHELL AND BONE OBJECTS.

1. Regurgitating stick of bone (side view, $\frac{3}{4}$ natural size). 2. Front and back views of handle ($\frac{3}{4}$ natural size).
3. Twin amulet of shell ($\frac{3}{4}$ natural size). 4. Shell amulet ($\frac{3}{4}$ natural size). 5. Bone amulet (natural size).

Shell celts, although common in the Lesser Antilles, were not found by the author in Porto Rico; a few, however, exist in local collections, including one owned by Mr. Junghannis of Bayamon, which is almost identical with those from Barbadoes. These objects are generally made from the lip of a more or less fossilized conch.

Apparently several genera of living marine shells were highly prized by the prehistoric Antilleans, for tinklers or bells, for beads, etc., and many genera of marine mollusca have been found in graves and caves in the mountain regions of the island.

The finest specimen of bone carving (plate XLVIII, 1, 2), one of the treasures of the Archbishop's collection, was made apparently from the rib of the manati, or sea-cow. It consists of a curved shaft, flat on one side and slightly rounded on the other, and a handle skilfully fashioned into a kneeling figure with a flattened crowned head. The ears are two prominent extensions, with roughened pits or depressions as if for the insertion of fragments of shell or gold nuggets. The position of the eyes is indicated by shallow pits, about the margins of which are concentric rings. The mouth is incised, but is without teeth. The body is smoothly polished; the umbilicus and male genitals are represented, and the waist is surrounded by a band. The vertebræ appear as a row of five shallow, incised rectangles along the middle dorsal line. The arms and legs are well cut; one hand rests on the knee, the other on the chest. The toes are shown on the dorsal side of the image, the soles of the two feet being turned in that direction. The incised lines about the legs and arms represent the bandages with which the Antilleans are said to have bound their limbs. There is a small knob on the outer side of the ankle. A portion of the handle, as well as of the shaft, is stained green, probably caused by its burial in the guano of the cave in which it was found. The author believes this carved rib was used for the same purpose as the wooden regurgitation sticks above described.

In the Nazario collection there is a clavicle with a carved figure forming the handle. This object was also probably used by the priests to induce vomiting.

PICTOGRAPHS

There are many rock etchings or pictographs in Porto Rico, particularly on the walls of caves, but as a rule they are more or less obscured by stalagma or vegetable growth. The best preserved examples of picture-writing occur on large boulders near waterfalls or rapids, or along the banks of the rivers, since the rocks on which

they are here cut are not so easily eroded as the softer formations which form the walls of caves.

The author devoted special study to the pictographs near Utuado, at other points along the Rio Grande de Arecibo, and in the caves near Manati, especially in the Cave of the Swallows, previously referred to. These pictographs are usually circular figures representing faces or heads with prominent ears, and sometimes with horns. When, as sometimes happens, bodies are represented, the limbs are appressed to the sides. No animal pictures are to be seen, unless certain zigzag figures may be interpreted to represent snakes. But geometrical figures, as spirals, circles, triangles, and rectangles, are not uncommon.¹

¹ For a fuller account see "Prehistoric Porto Rico Pictographs," *American Anthropologist* (N. S.), vol. 5, July-September, 1903.

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